



NIH Chemical Waste Tag

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Division of Environmental Protection

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Key Provision

- Allowing the very small quantity generators (VSQGs) to transport hazardous waste to the large quantity generators (LQGs) under the control of the same person, etc.
- Allowing VSQGs to maintain its existing generator category in the event they generate an excessive amount of waste in a calendar month.






How does this affect operations at the NIH?






- EPA revised the regulations for labeling and marking of containers to clearly indicate the hazards of the hazardous waste.

Hazard Waste Determination

- Hazardous waste determination will now be made at the point of generation (in the labs).
- NIH Staff will be required:
 - to know the chemical hazards and apply hazard labels to their waste containers – at the point of generation.
 - NIH staff can use knowledge or testing.
- The words “hazardous waste” will have to be on the waste container (in the lab), if it applies.
 - MDE requires Interim waste containers apply

Chemical Waste Identification:

If a      box is checked below, you must check the hazardous waste box, yes.

Flammable	Corrosive	Reactive	Toxic	Oxidizer
				
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

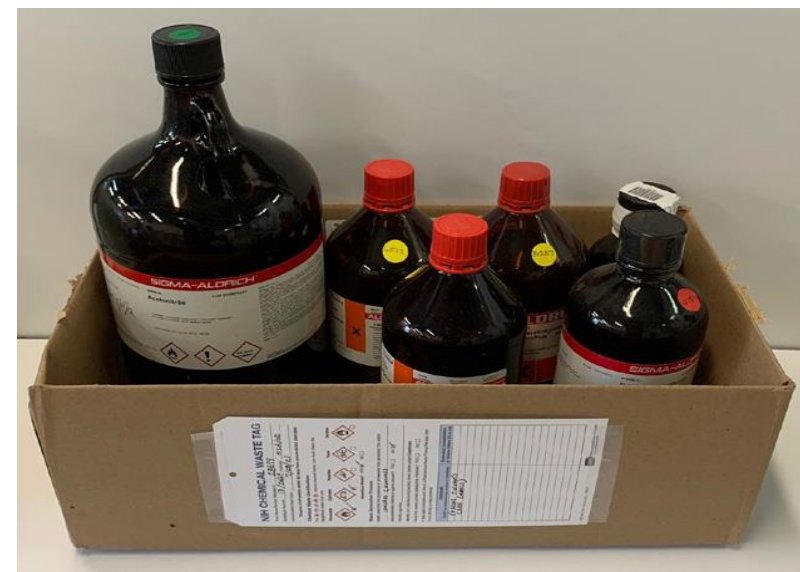
Hazardous Waste? YES ☐ NO ☐

Hazard Waste Determination (Cont.)

The new regulations require NIH staff to determine to an inspector, State (MDE) or Federal (EPA), the hazardous waste determination to all waste.

Typical Questions:

1. Why is this waste hazardous?
2. I see pictogram flammable and corrosive checked, why?
3. Why check flammable and corrosive for a dye?



Resources for Hazard Waste Determination

- **Safety data sheet (SDS)** of each hazardous chemical that is in the waste container.
- **Hazard labels and warnings** on the bottles used in generating the waste.
- **Knowledge** of protocols and/or processes.
- **Testing** that illustrates the properties of the waste. (i.e., pH paper)
- **Advice** received from DEP or CWS.
- Refer to Guidance Document:
https://nems.nih.gov/Documents/Chemical_Waste_Tag_Guidance.pdf
- **Future NEMS tools:**
 - Segmented Training Videos
 - Hazardous Waste Search Table
 - Waste Tag Samples

Overclassifying

- Formaldehyde (37%) containing Methanol (20%)



- PBS
- Sheath Fluid with Sodium Azide
- Bleach



Waste Tag:
Checked
Corrected
Waste Tag:



CAUTION
HAZARDOUS
WASTE



Hazardous Waste Determination for Blue and White Carboy



HAZARDOUS OR NONHAZARDOUS



Chemical Tag Revisions

- Pictograms derived from the Global Harmonized System
 - GHS has 9 distinct Pictograms
 - OSHA has 8 distinct Pictograms
 - DOT has a variation of 15 pictograms
- The words “Hazardous Waste” was included on the tag with a “yes or no” check box
- Explanations and examples of Pictogram hazards

With only five pictograms available, inclusions apply.

- Waste Carboys (3-gal and 5-gal)
- Dry Chemical Waste Containers
- Pharmacy Waste collected in the provided Chemical Waste container.

Revised 4/20 - FRONT





Hazardous Waste Search Table

Search by HW Code, Chemical Name or Abstract No

Chloroform

Clear filter

Show 10 entries

Showing 1 to 3 of 3 entries (filtered from 2,077 total entries)

Hazardous Waste No.	Chemical Abstracts No.	Substance	HW Type	Hazards
D022	67-66-3	Chloroform	D-Listed	<input type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input type="checkbox"/> Reactive <input checked="" type="checkbox"/> Toxic <input type="checkbox"/> Oxidizer
U044	67-66-3	Chloroform	U-Listed	<input type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input type="checkbox"/> Reactive <input checked="" type="checkbox"/> Toxic <input type="checkbox"/> Oxidizer



Hazardous Waste Search Table

Search by HW Code, Chemical Name or Abstract No

Cyanogen bromide

Clear filter

Show 10 entries

Showing 1 to 2 of 2 entries (filtered from 2,077 total entries)

Hazardous Waste No.	Chemical Abstracts No.	Substance	HW Type	Hazards
D003	506-68-3	Cyanogen bromide	D-Listed	<input type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input checked="" type="checkbox"/> Reactive <input checked="" type="checkbox"/> Toxic <input type="checkbox"/> Oxidizer
U246	506-68-3	Cyanogen bromide (CN)Br		<input checked="" type="checkbox"/> Toxic <input type="checkbox"/> Oxidizer

Hazardous waste due to the reactivity characteristic for the substance, solid or liquid capable of a chemical reaction.

Previous

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Hazardous Waste Search Table

Search by HW Code, Chemical Name or Abstract No

Silver Dichromate

Clear filter

Show 10 entries

Showing 1 to 2 of 2 entries (filtered from 2,077 total entries)

Hazardous Waste No.	Chemical Abstracts No.	Substance	HW Type	Hazards
D007	7784-02-3	Silver dichromate	D-Listed	<input type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input type="checkbox"/> Reactive <input checked="" type="checkbox"/> Toxic: Chromium <input checked="" type="checkbox"/> Oxidizer
D011	7784-02-3	Silver dichromate	D-Listed	<input type="checkbox"/> Flammable <input type="checkbox"/> Corrosive <input type="checkbox"/> Reactive <input checked="" type="checkbox"/> Toxic: Silver <input checked="" type="checkbox"/> Oxidizer

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NIH Drain Discharge Guidance

Timothy (Ty) Adkins
Waste and Resource Recovery Branch
Division of Environmental Protection

October 20, 2021



NIH Waste Policy

- Policy prohibits discharging of chemicals unless approved by Office of Research Facilities, Division of Environmental Protection ORF/DEP
- List of reagents or solutions approved for discharge
- DEP developed an [approval process](#) for staff to submit requests to discharge certain waste materials via the sanitary sewer

<https://spapps.od.nih.gov/sites/DEPAuthorizations/SitePages/Home.aspx>

Verify your waste before discharging to drain



What to Know to Ensure Compliance

- If unsure of concentration, pH, or contents in the total waste, have the waste collected and disposed by the Chemical Waste Service.
- Any aqueous waste outside the pH range between 6 and 10 is not authorized for discharge to drain.
- Bleach combined with any antibiotics requires collection and disposal by the Chemical Waste Service.
- All Approved Chemicals are used in a process before discharge.



The New Drain Discharge Application Site

Application to Dispose of Specific Chemical Reagents to the Sanitary Sewer

This application is a conduit for DEP to obtain information to establish a better understanding regarding your need to dispose of chemicals to the Sanitary Sewer System versus collection and pick up by the NIH Chemical Waste Disposal Service. Our intent is to promote prudent laboratory practices that will not harm human health or the environment.

This authorization process is based on NIH Manual Issuance 3032 and developed with input from the research community to address the limited need for disposal of specific liquid chemical waste to the sanitary sewer. **Consult the NIH Drain Discharge Guidance prior to initiating an application.**

Note:

- An approved application is valid for one year unless otherwise stipulated by DEP.
- The applicant will be notified 30 days prior to expiration and required to review and reaffirm that there have been no changes in the waste stream and/or amend to reflect such changes.
- Any changes to the chemical reagents, **including manufacturing/brand changes** will void the authorization and a new application will be required.
- Any aqueous waste outside the pH range between 6 and 10 is not authorized for discharge to drain.

Create Chemical Discharge Approval Requests

Click here to apply.

Create Request

Check Request Status

Click here to search for requests that you have submitted or saved as drafts.

Search Requests

View Approved Applications

Click here to view Approved Applications.

View Applications

View Not Approved Applications

Click here to view Not Approved Applications.

View Applications



The New Drain Discharge Application Site (cont.)

Create New Application



Notice

Applicant Information

Applicant Name (if you are submitting this request for someone else)

0012103289 / Timothy Adkins (OD)

[i](#) To update, click the Clear button and search by name, NIHID or email.

[Clear](#)

Alternate Contact (you can add more alternate contacts later)

Hint: search by name, NIH ID or email

[Clear](#)

Principal Investigator or Laboratory Manager *

Hint: search by name, NIH ID or email

[Clear](#)

DOHS Safety and Health Specialist or IC Safety Contact * ([Safety and Health Specialists Info](#))

Hint: search by name, NIH ID or email

[Clear](#)

Cancel

Previous

Save



The New Drain Discharge Application Site (cont.)

Request Details

Application #: 21-0000370-00
Application Date: 07/12/2021
Request Status: Cancelled
Expiry Date:

Applicant Information

Process

Location

Chemical Constituents

Attachments

Feedback

Approval

Notes

Audit Log

Emails

Process:

Process Details:

Volume Discharged per Week:

Approximate pH:

Effluent Phases:

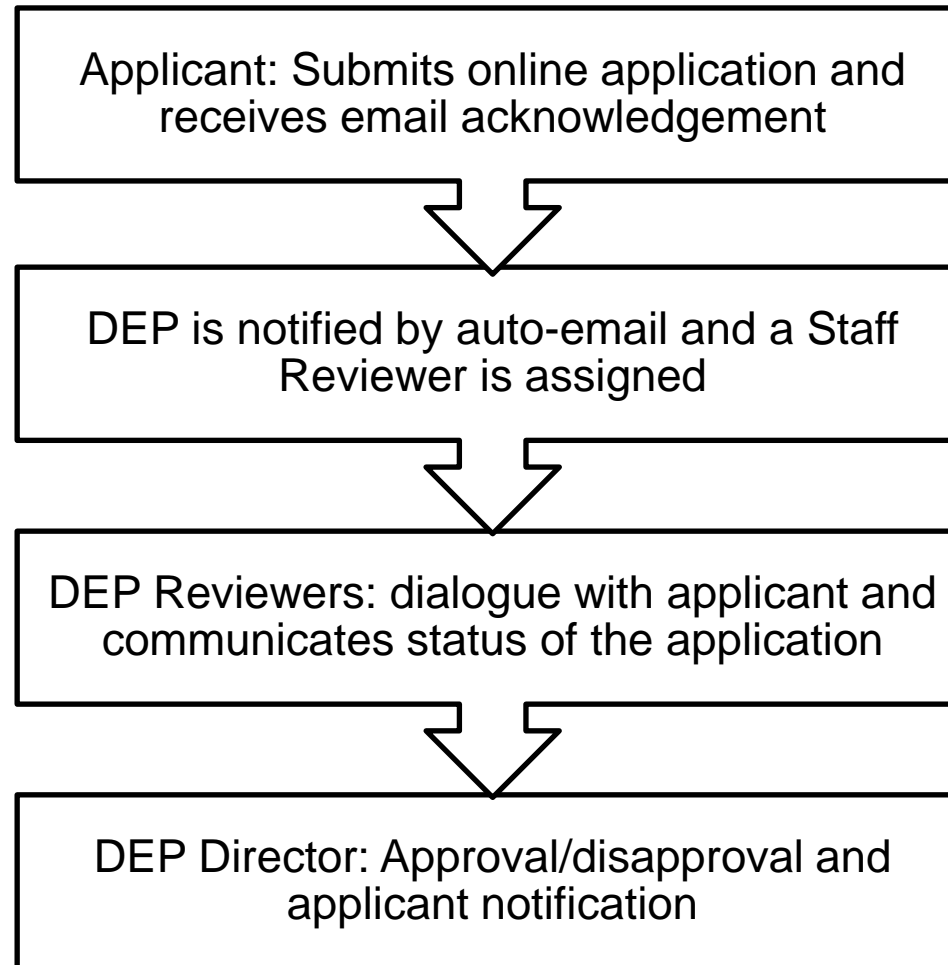
Justification:

Equipment

Manufacturer

Showing total 0 entries

“Application Process to Dispose of Specific Chemical Reagents to the Sanitary Sewer”



Applicant Dashboard Features:

1. **Complete and apply for discharge authorization**
2. **Check the status of their applications**
3. **View all previously approved/disapproved applications**



The New Drain Discharge Application Site (cont.)

- Differences to the New Application Site:
 - Improves the structure and features of applications
 - Centralizes the records and evaluations
 - Generating reports, specific or general
 - Vital flexibility on managing applications
 - Includes renewals and possible overrides to an application
 - Updating an applicant information

Development of Approved List

- DEP worked with NIEHS approved combination of 250+ chemicals, products, and prep solutions.
 - Chemicals e.g.; Sodium Chloride, Magnesium Sulfate, Potassium Acetate
 - Products e.g.; Bleach, Blood Bank Saline, BD FACFlow Sheath Fluid
 - Prep solutions e.g.; Brain slicing perfusion, Embryo Water, Dialysis Buffer
- Some approved require an allowable concentration limit or require autoclave treatment (e.g. Antibiotics).
- Any pharmaceutical waste must be handled as chemical waste.
 - Any controlled substances including precursor chemicals are subject to a DEA registration.



APPENDIX B – EXPANDED LIST OF CHEMICAL SOLUTIONS APPROVED FOR DRAIN DISPOSAL

- (*) = allowable concentration limit (•) = antibiotic

B

B-D (+) Glucose, and all Isomers – Beta D Glucose
Bacto Tryptic Soy Broth
Basal Medium Eagle
BD™ FACSFlow™ Sheath Fluid
Beta-Glucuronidase, Type VIII
Bicine [N, N-bis (2-hydroxyethyl) glycine]
Bile Salts
*Bleach ($\leq 10\%$ Clorox Bleach)
Blood Bank Saline
Bovine Serum Albumin (BSA)
Brain Slicing Perfusion Solution

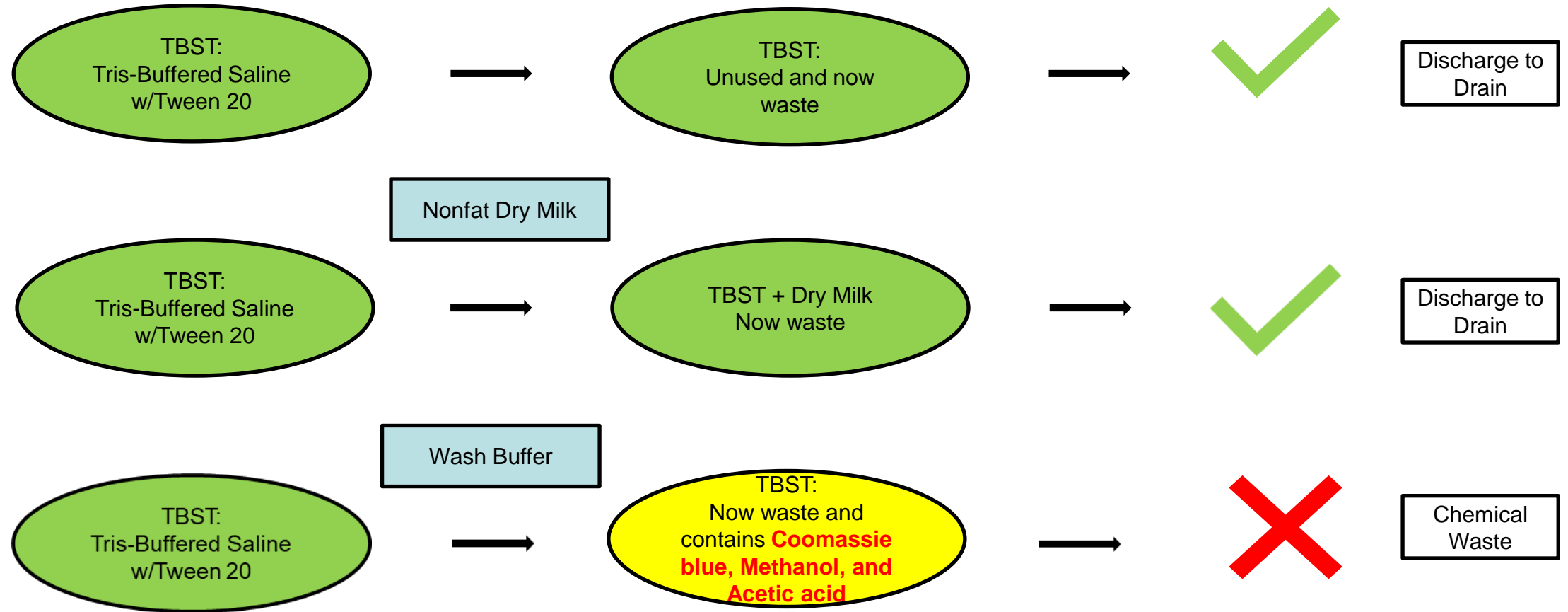
I

Immunoglobulins, IgG
Immunoglobulins, IgM
Immunoglobulins, IgE
Insect Medium Supplement
Instant Ocean® Sea Salt
Insulin
Invertase, Grade V
IPL-41 Insect Medium
Iscove's Modified Dulbecco's Medium (IMDM)
IsoFlow™ Sheath Fluid (Beckman Coulter)
*Isopropanol (2-propanol) (<2% with Flash Point >140°F)

All approved chemicals are in a process before discharge



WHAT DOES ALL APPROVED MEAN?

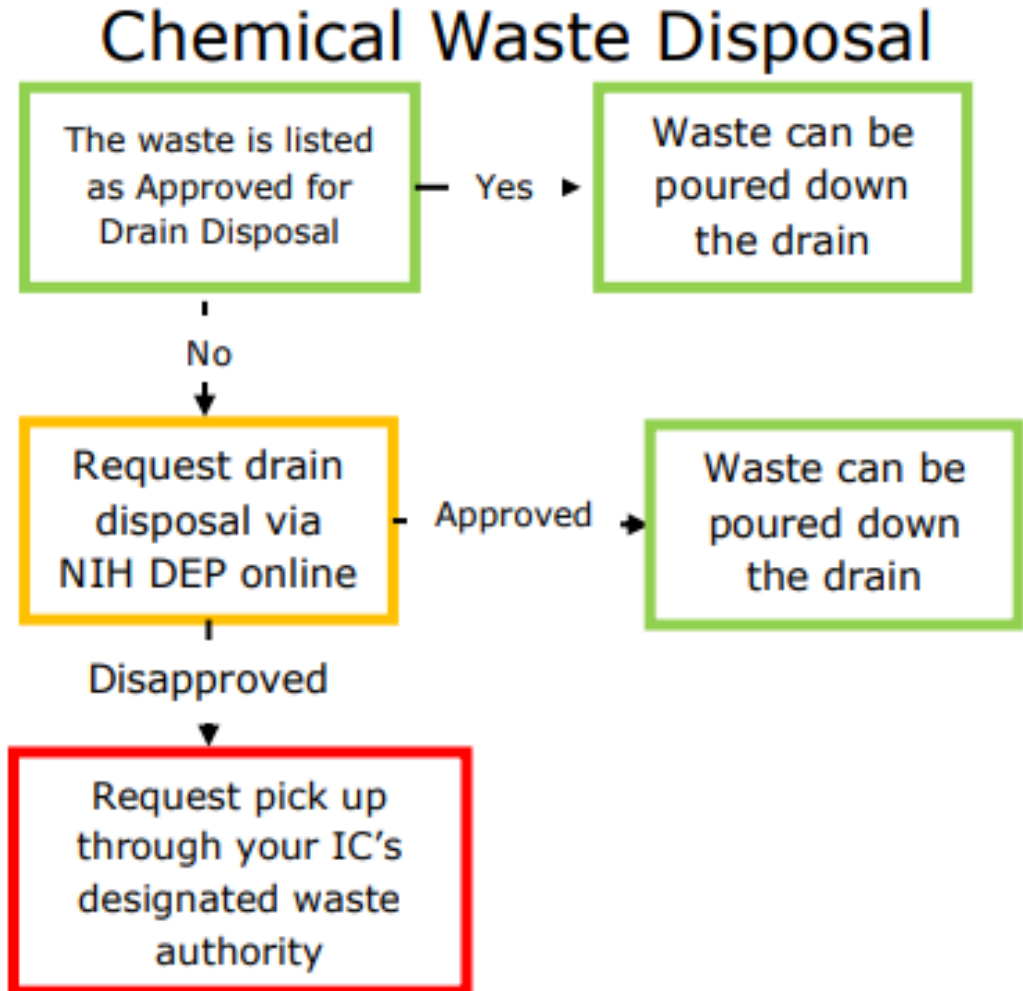




Chemical Determination for Hazardous Waste

If the chemical in question is not approved, the NIH will need to determine if it is acceptable for drain disposal

Generally, if the chemical waste is Ignitable, an Oxidizer, Corrosive, Reactive or Toxic, it is a hazardous waste that needs to be collected for disposal. Additionally, chemicals on EPA waste lists F, K, P, and U are identified as hazardous waste and subject to disposal regulations.





Waste Containing Antibiotics

- Autoclaving is the best practice and reliable means to inactivation.
- Antibiotics not listed below should be collected as chemical waste.

Inactivate by heat (autoclave or boil) before pouring down the drain	Must be submitted for combustion (treated as hazardous waste)
Ampicillin	Blasticidin-S
Amphotericin B (Fungizone)	Choramphenicol
Carbenicillin	Ciprofloxacin
Erythromycin	Enrofloxacin
Geneticin (G418)	Kanamycin
Gentamicin	Nalidixic acid
Neomycin	Vancomycin
Penicillin	Zeocin
Puromycin	Zeomycin
Streptomycin	
Sulfadoxine	
Tetracycline	



Chemicals Approved for Drain Disposal

When disposing of approved chemical via the drain use the following procedure:

1. Ensure the sink to be used for drain disposal of chemicals is clear of all items.
2. The worker shall wear appropriate PPE (lab coat, nitrile gloves, and protective eye wear).
3. Turn on cold water and let run for about one (1) minute to ensure there is adequate flow of water down drain, no back up into the sink. Do not use the sink for disposal of chemicals if water does not freely flow down the drain.
4. Slowly pour material down the sink drain minimizing splashing.
5. Rinse out the material container if to dispose of, recycle, or reuse.
6. Clean sink to ensure sink basin is free of material.
7. Let tap water run for about two (2) minutes after pour to allow the material to flush through p-traps.
8. Shut off water taps to sink.

- Promote collection as the best practice handling all waste.

Selection 1

Selection 2

Selection 3

Selection 4



Pour Down the Drain Wisely

Follow the Guide @
https://nems.nih.gov/Drain_Guide



Pour Down the Drain Wisely

Follow the Guide @
https://nems.nih.gov/Drain_Guide



**Do you KNOW What Can
Go Down the Drain?**



Follow the Guide @
https://nems.nih.gov/Drain_Guide



**Do you KNOW What Can
Go Down the Drain?**

Find list of Non-acceptable and
Acceptable liquids & Solvents @

https://nems.nih.gov/Drain_Guide



- Both available and promote the Drain Discharge Guidance
- 11 x 17 posters with adhesive backing
- Water-resistant decals for placement at the sink(s)
- Contact Craig Upson, Craig.Upson@nih.gov, with the following information:
 - Poster selection number(s) and/or Decal with quantity
 - Contact name(s)
 - Site location (e.g. NIH Main Campus, Baltimore)
 - Institute
 - Building
 - Room(s)



Resources

- The guidance document is now available
<https://nems.nih.gov/programs/WM/Pages/NIH-Drain-Disposal-Guide.aspx>
- The NIH Chemical Waste Tag Guidance Tool
https://nems.nih.gov/Documents/Chemical_Waste_Tag_Guidance.pdf
- Waste Guide and Services
<http://wasteguide.nih.gov/>
- NIH Solvent Recovery Program
https://nems.nih.gov/programs/WM/Documents/Solvent_Recovery.pdf
- NIH Chemical Surplus for Redistribution
https://nems.nih.gov/programs/WM/Documents/Surplus_Chemical_Redistribution.pdf

Questions? Comments?



Contact Information

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BRC 02B508

We are happy to help you!

Questions? Comments?



Contact Information

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We are happy to help you!